

# PATENT SPECIFICATION

DRAWINGS ATTACHED



828,529

Date of filing Complete Specification: April 25, 1956.

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Index at acceptance:—Classes 27, A1B1; and 106(5), M4(C3:E:N).

International Classification:—G01f, G07f.

## COMPLETE SPECIFICATION

### Improvements in or relating to apparatus for Dispensing Beverages

#### ERRATA

SPECIFICATION No. 828,529

Page 1, line 61, after "5" insert " "

Page 1, line 77, for "the" read "a"

Page 2, line 106, for "co" read "to"

THE PATENT OFFICE

18th March, 1960

- the opposite ends of a pivotally mounted lever member which is adapted to be actuated by the placing of a receptacle in said delivery position, the swinging movement of said lever member being adapted to effect the movement of the control members associated with the valves of each chamber in opposite directions so as to close said inlet valves and open said outlet valves and thereby effect the simultaneous discharge of the contents of all the measuring chambers.
- According to the preferred arrangement, said control members are so arranged that the opening of the outlet valve of each chamber is delayed until the inlet valve of such chamber has been closed.
- If desired, coin controlled means may be provided for preventing the actuation of the valve control means until a coin or coins has been inserted.
- The invention will be more completely understood from the following detailed description which is given in conjunction with
- a sleeve. The inlet valve rods 8, 8<sup>1</sup> for the two chambers are connected at their upper ends to a common cross-bar 10 and the outlet valve rods 9, 9<sup>1</sup> for the chambers are also connected to a similar cross-bar 11 disposed slightly above the other cross-bar, and the two cross bars are connected by two pivoted links 12, 12<sup>1</sup> to the opposite ends of the cross-arm of the pivotally mounted T-shaped lever 13 so that when the latter is rocked about its pivotal point 14, the two cross-bars 10, 11 together with the inlet and outlet valve rods move in opposite directions. The T-shaped lever 13 is mounted in such a way that when it is in its normal position with the inlet valves 5, 5<sup>1</sup> open and the outlet valves 6, 6<sup>1</sup> shut, the stem of the lever is inclined to the vertical with the foot 16 of the lever pointing forwards, and the lever is so positioned with respect to the delivery pipes or nozzles 7, 7<sup>1</sup> that when a receptacle is pushed under these nozzles it automatically acts upon the foot 16

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## COMPLETE SPECIFICATION

### Improvements in or relating to apparatus for Dispensing Beverages

I, JONAS GEOFFREY JESSEL, of 39 Cowper Road, Southgate, London, N.14, a British subject, do hereby declare the invention, for which I pray that a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to apparatus for dispensing beverages such as tea or coffee and has for its main object to provide an arrangement for enabling measured quantities of such beverages to be served at high speed and at predetermined strength.

The invention accordingly consists in an apparatus for the purpose referred to in the preceding paragraph comprising a plurality of measuring chambers having inlet valves communicating with reservoirs adapted to contain different liquids and outlet valves communicating with pipes or conduits leading to a delivery position, such valves being operatively associated with control members connected to the opposite ends of a pivotally mounted lever member which is adapted to be actuated by the placing of a receptacle in said delivery position, the swinging movement of said lever member being adapted to effect the movement of the control members associated with the valves of each chamber in opposite directions so as to close said inlet valves and open said outlet valves and thereby effect the simultaneous discharge of the contents of all the measuring chambers.

According to the preferred arrangement, said control members are so arranged that the opening of the outlet valve of each chamber is delayed until the inlet valve of such chamber has been closed.

If desired, coin controlled means may be provided for preventing the actuation of the valve control means until a coin or coins has been inserted.

The invention will be more completely understood from the following detailed description which is given in conjunction with

the accompanying drawings in which Figures 1 and 2 are front and sectional side views respectively of the working parts of a dispensing apparatus constructed in accordance with the invention.

Referring now to these drawings, I provide my dispensing apparatus with two reservoirs 1, 1<sup>1</sup> which may contain brewed tea and milk respectively, and I provide the base of each of these reservoirs with a measuring chamber 3, 3<sup>1</sup> which communicates with its respective reservoir through an inlet valve 5, 5<sup>1</sup> and is provided with an outlet valve 6, 6<sup>1</sup> by means of which it communicates with a delivery pipe or nozzle 7, 7<sup>1</sup> disposed at some convenient point in the apparatus. The valves 5, 5<sup>1</sup> and 6, 6<sup>1</sup> in the measuring chambers are controlled by slidably mounted valve rods 8, 8<sup>1</sup> and 9, 9<sup>1</sup> which are arranged vertically so that the rods for each chamber are disposed one inside the other, the rod for each outlet valve passing through the inlet valve and through the rod for such valve, which latter rod takes the form of a sleeve. The inlet valve rods 8, 8<sup>1</sup> for the two chambers are connected at their upper ends to a common cross-bar 10 and the outlet valve rods 9, 9<sup>1</sup> for the chambers are also connected to a similar cross-bar 11 disposed slightly above the other cross-bar, and the two cross bars are connected by two pivoted links 12, 12<sup>1</sup> to the opposite ends of the cross-arm of the pivotally mounted T-shaped lever 13 so that when the latter is rocked about its pivotal point 14, the two cross-bars 10, 11 together with the inlet and outlet valve rods move in opposite directions. The T-shaped lever 13 is mounted in such a way that when it is in its normal position with the inlet valves 5, 5<sup>1</sup> open and the outlet valves 6, 6<sup>1</sup> shut, the stem of the lever is inclined to the vertical with the foot 16 of the lever pointing forwards, and the lever is so positioned with respect to the delivery pipes or nozzles 7, 7<sup>1</sup> that when a receptacle is pushed under these nozzles it automatically acts upon the foot 16

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of the T-shaped lever 13 so as to swing the stem of the lever 13 into the vertical position and actuate the valve rods 8, 8<sup>1</sup> and 9, 9<sup>1</sup> in such a way as to close the inlet valves 5, 5<sup>1</sup> and open the outlet valves 6, 6<sup>1</sup> thus allowing the contents of the two measuring chambers 3, 3<sup>1</sup> to discharge into the receptacle 17 placed under the delivery nozzles. The cross rods 10, 11 pass through slots 18, 19 in the valve rods, these slots being so designed as to ensure that the inlet valves 5, 5<sup>1</sup> close before the outlet valves 6, 6<sup>1</sup> open. The T-shaped lever 13 or some other part of the mechanism is suitably spring or gravity loaded, for example by a weight 15, so that when the receptacle 17 is removed, the reverse process takes place, the outlet valves 6, 6<sup>1</sup> being closed and the inlet valves 5, 5<sup>1</sup> being reopened thus recharging the two measuring chambers 3, 3<sup>1</sup> with a fresh supply of liquid from the two reservoirs 1, 1<sup>1</sup> in readiness for the next dispensing operation. The slots 18, 19 in the valve rods now ensure that the outlet valves 6, 6<sup>1</sup> close before the inlet valves 5, 5<sup>1</sup> open.

It will thus be seen that by means of this arrangement a measured quantity of beverage is automatically withdrawn from the apparatus by the insertion and removal of the receptacle and that by maintaining a supply of brewed tea or other liquid in one reservoir and either hot or cold milk in the other reservoir, a beverage of substantially constant predetermined strength is obtained from the discharge nozzles.

In order that the cost of obtaining measured quantities of the beverage may be prepaid, a coin operated mechanism may be arranged in conjunction with the T-shaped lever 13 and so constructed as to prevent such lever from being operated until a coin or coins has been inserted in a suitably arranged slot.

This mechanism conveniently takes the form of a rotatable member 20 which is normally disposed in the path of movement of the T-shaped lever 13 and is keyed to the shaft 21 of a centrally pivoted lever 22 in which a coin receptacle 23 is provided, the arrangement being such that a coin on being inserted in a suitably arranged slot drops into the receptacle 23 and swings the lever 22 about its pivotal axis and thus moves the rotatable member 20 out of line of the path of movement of the T-shaped member 13 thus allowing the latter to swing. This T-shaped lever 13 in moving into its operative position acts upon the member 20 so as to effect a further movement of the lever 22 so that the latter swings into a further position against the action of a spring 24 and allows the coin to fall into a suitable cash box 25. The lever 22 now relieved of the weight of the coin or coins returns to its original position when the T-shaped lever 13 swings back on the withdrawal of the receptacle 17.

#### WHAT I CLAIM IS:—

1. Apparatus for dispensing beverages comprising a plurality of measuring chambers having inlet valves communicating with reservoirs adapted to contain different liquids and outlet valves communicating with pipes or conduits leading to a delivery position, such valves being operatively associated with control members connected to the opposite ends of a pivotally mounted lever member which is adapted to be actuated by the placing of a receptacle in said delivery position, the swinging movement of said lever member being adapted to effect the movement of the control members associated with the valves of each chamber in opposite directions so as to close said inlet valves and open said outlet valves and thereby effect the simultaneous discharge of the contents of all the measuring chambers.

2. Apparatus according to Claim 1, wherein said control members are so arranged that the opening of the outlet valve of each chamber is delayed until the inlet valve of such chamber has been closed.

3. Apparatus according to Claim 1 or 2, wherein said control members comprise slidably mounted valve rods, the rods controlling the inlet and outlet valves of each measuring chamber being disposed one inside the other in telescopic fashion.

4. Apparatus according to Claims 1, 2 and 3, wherein said lever member comprises a T-shaped lever, the stem of which serves as an actuating member, and the cross-arm of which is connected by two pivoted links to a pair of pins or cross-shafts slidably arranged in slots in said valve rods, and so positioned as to prevent the pin or cross-shaft controlling the outlet valve from reaching the end of its slot until the pin or cross-shaft controlling the inlet valve has moved sufficiently to allow such inlet valve to close.

5. Apparatus according to Claim 4, wherein said pins or cross-shafts provide linkages between the corresponding valve rods of the different chambers.

6. Apparatus according to any one of the preceding claims, wherein means are provided for automatically returning the valves to their normal position on the removal of the receptacle from the actuating means.

7. Apparatus according to any one of the preceding claims, wherein coin controlled means are provided for preventing the actuation of the valve control means until a coin has been inserted.

8. Apparatus according to Claims 1 and 7, wherein said coin controlled means comprises a movably mounted stop member which is normally disposed in the path of movement of said lever member, but which is adapted to be moved out of such path by the insertion of a coin.

9. Apparatus according to Claim 8, wherein

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5 said stop member comprises a rotatable member which is operatively connected with a pivoted lever provided with means for retaining a coin in suspension, said rotatable member being so shaped and arranged that the insertion of a coin into said retaining means brings about a preliminary movement of said pivoted lever and said rotatable member which is sufficient to allow a preliminary actuating movement of said lever member, a further actuating movement of said lever member being adapted to bring about a further move-

ment of said pivoted lever to effect the encashment of the coin.

10. Apparatus according to Claim 8 or 9, wherein spring means are provided for automatically restoring said stop member to its normal position on the encashment of the coin. 15

11. Apparatus for dispensing beverages, constructed, arranged and operating, substantially as described with reference to the accompanying drawings. 20

MARKS & CLERK.

#### PROVISIONAL SPECIFICATION

#### Improvements in or relating to apparatus for Dispensing Beverages

25 I, JONAS GEOFFREY JESSEL, of 39, Cowper Road, Southgate, London, N.14, a British subject, do hereby declare this invention to be described in the following statement:—

30 This invention relates to apparatus for dispensing beverages such as tea or coffee and has for its main object to provide an arrangement for enabling measured quantities of such beverages to be served at high speed and at predetermined strength.

35 The invention accordingly consists in an apparatus for the purpose referred to in the preceding paragraph comprising a measuring chamber for the beverage to be dispensed communicating by means of separate valves with a reservoir or other supply means, and a delivery device, said valves being controlled by means which is adapted to be actuated by the placing of a receptacle under said delivery device so as to bring about the opening of one valve and the closing of the other valve and thereby effect the discharge of the contents of said measuring chamber through said delivery device. 40

45 If desired, two or more measuring chambers may be provided having inlet valves communicating with reservoirs containing different liquids and outlet valves communicating with a common delivery device, the control means being so arranged as to actuate the valves of all the measuring chambers simultaneously and thereby effect the discharge of the contents of all the measuring chambers through said delivery device. 50

55 According to the preferred arrangement, the valves controlling each measuring chamber are attached to slidably mounted valve rods which are operatively connected with the opposite ends of a pivotally mounted T-shaped lever which is adapted to be actuated by the placing of a receptacle under said delivery device, the swinging movement of said T-shaped lever being adapted to effect the movement of said valve rods in opposite directions so as to close the valve communicating with the reservoir or other supply means and open the valve communicating with the delivery device. 60

65 If desired, coin controlled means may be provided for preventing the actuation of the valve control means until a coin or coins has been inserted. 70

75 In carrying the invention into effect in one convenient manner, I provide by dispensing apparatus with two reservoirs which may contain brewed tea and milk respectively, and I provide the base of each of these reservoirs with a measuring chamber which communicates with its respective reservoir through an inlet valve and is provided with an outlet valve by means of which it communicates with a delivery pipe or nozzle disposed at some convenient point in the apparatus. The two valves in each measuring chamber are controlled by slidably mounted valve rods which are conveniently disposed vertically one inside the other, the rod for the outlet valve passing through the inlet valve and through the rod for such valve, which latter rod takes the form of a sleeve. The inlet valve rods for the two chambers are connected at their upper ends to a common cross-bar and the outlet valve rods for the chambers are also connected to a similar cross-bar disposed slightly above the other cross-bar, and the two cross-bars are connected by two pivoted links to the opposite ends of the cross-arm of a pivotally mounted T-shaped lever so that when the latter is rocked about its pivotal point, the two cross-bars together with the inlet and outlet valve rods move in opposite directions. The T-shaped lever is mounted in such a way that when it is in its normal position with the inlet valves open and the outlet valves shut, the stem of the lever is inclined to the vertical with the foot of the lever pointing forwards, and the lever is so positioned with respect to the delivery pipe or nozzle that when a receptacle is pushed under the nozzle it automatically acts upon the foot of the T-shaped lever so as to swing the stem of the lever into the vertical position and actuate the valve rods in such a way as to close the inlet valves and open the outlet valves thus allowing the contents of the two measuring chambers to dis- 80 85 90 95 100 105 110 115

charge into the receptacle placed under the delivery nozzle. The cross rods pass through slots in the valve rods, these slots being so designed as to ensure that the inlet valves close before the outlet valves open. The T-shaped lever or some other part of the mechanism is suitably spring or gravity loaded so that when the receptacle is removed, the reverse process takes place, the outlet valves being closed and the inlet valves being reopened thus recharging the two measuring chambers with a fresh supply of liquid from the two reservoirs in readiness for the next dispensing operation. The slots in the valve rods now ensure that the outlet valves close before the inlet valves open.

It will thus be seen that by means of this arrangement a measured quantity of beverage is automatically withdrawn from the apparatus by the insertion and removal of the receptacle and that by maintaining a supply of brewed tea or other liquid in one reservoir and either hot or cold milk in the other reservoir, a beverage of substantially constant predetermined strength is obtained from the discharge nozzle.

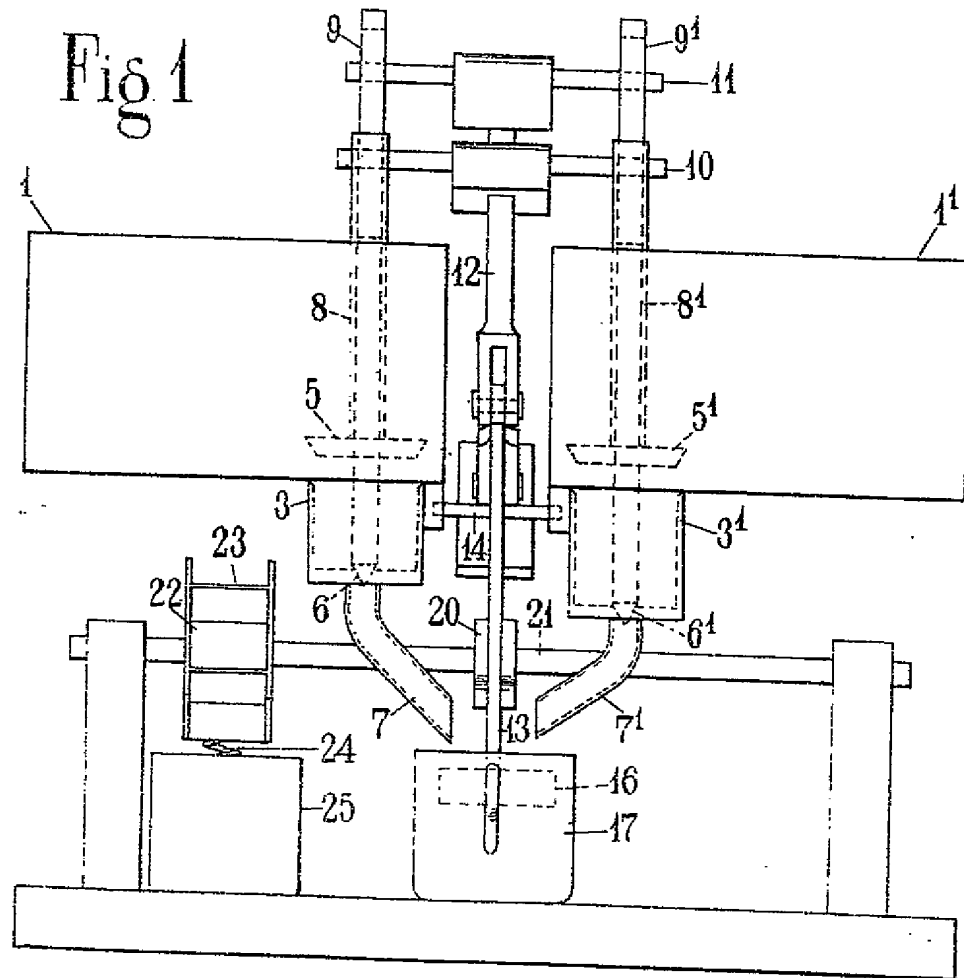
In order that the cost of obtaining measured

quantities of the beverage may be prepaid, a coin operated mechanism may be arranged in conjunction with the aforesaid T-shaped lever and so constructed as to prevent such lever from being operated until a coin or coins has been inserted in a suitably arranged slot.

This mechanism conveniently takes the form of a rotatable member which is normally disposed in the path of movement of the T-shaped lever and is mounted on a centrally pivoted lever in which the coin slot is disposed, the arrangement being such that the insertion of a coin swings the last-mentioned lever about its pivotal axis and thus moves the rotatable member out of line of the path of movement of the T-shaped member thus allowing the latter to swing. This T-shaped lever in moving into its operative position effects a further movement of the lever carrying the coin slot so that the latter swings into a further position against the action of a spring and allows the coin to fall into a suitable cash box. The lever now relieved of the weight of the coin or coins returns to its original position when the T-shaped lever swings back on the withdrawal of the receptacle.

MARKS & CLERK.

Fig 1



2 SHEETS

## COMPLETE SPECIFICATION

This drawing is a reproduction of  
the Original on a reduced scale.  
SHEETS 1 & 2

